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09/497,508	02/04/2000	Jin Jang	8733.20079	7572

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EXAMINER

LOUIE, WAI SING

ART UNIT PAPER NUMBER

2814

DATE MAILED: 11/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.



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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 15

Application Number: 09/497,508
Filing Date: February 04, 2000
Appellant(s): JANG ET AL.

Teresa M. Arryo
For Appellant

EXAMINER'S ANSWER

MAILED
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This is in response to the appeal brief filed 8/13/02.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

The rejection of claims 1-7 and 9 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

5,612,250	Ohtani et al.	3/1997
5,994,164	Fonash et al.	11/1999

(10) *Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

Claim Objections

1. The amendment filed 11/20/01 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

In page 4, line 10, applicant replaces "bar-like silicon crystallites" with "needle-shaped silicon crystallites". This is new matter introduced to the specification.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 3, 6, and 9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled

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in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

- In claims 1, 3, 6, and 9, a plurality of “needle-shaped silicon crystallites” is claimed. However, fig. 11 and 12 disclose a stick-like picture. A needle-like shape should be pointy on one end or both ends.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (US 5,612,250) in view of Fonash et al. (US 5,994,164).

With regard to claims 1, 3, 6, and 9, Ohtani et al. disclose a polycrystalline film (col. 5, line 64 to col. 20, line 42) comprising:

- Containing metal atoms, nickel, having a density range of 1×10^{16} to 1×10^{19} atoms/cm³ on average, where the metal is a catalyst for metal induced crystallization of amorphous silicon (col. 1, line 27 to col. 2, line 45 and col. 8, lines 17-24);

- The polycrystalline silicon film comprises a plurality of bar-like silicon crystallites (fig. 2c), due to the way the crystal are grown and inherently forms the patterned feature (col. 8, lines 2-13 and col. 20, lines 35-41);
- The polycrystalline silicon film is formed on an insulating substrate (col. 17, lines 57-59);
- Ohtani do not disclose an electrical conductivity activation energy between 0.52 to 0.71 eV. However, Fonash et al. disclose forming a polycrystalline film with nickel as a catalyst element similar to Ohtani (Fonash col. 3, lines 38-49), where the conductivity activation energy is 0.52 eV @ 290°C (Fonash fig. 8b).

Therefore, it is obvious that a similar material would have a similar conductivity activation energy level.

With regard to claims 2, 5, and 7, Ohtani et al. disclose the polycrystalline silicon film is formed by crystallizing an amorphous silicon film containing Ni atoms (see discussion with respect to claim 1 above) by means of thermal treatment with a lamp annealing process and the lamp produces a electric field which applies the electric field onto the silicon film (col. 14, line 33-37).

With regard to claim 4, Ohtani et al. disclose an oxide layer 202 is in between the insulating substrate 201 and amorphous silicon film 203, which crystallizes into polycrystalline silicon film (col. 11, lines 14-44 and fig. 4a).

(11) Response to Argument

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- Applicant amended the specification after the first office action to replace the “bar-like silicon crystallites” with “needle-shaped silicon crystallites”. This is new matter introduced to the specification. Therefore, the “needle-shaped silicon crystallites” is excluded from the claim limitation.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


wsf

November 22, 2002

Conferees

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PRIMARY EXAMINER

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